IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

REMARKS

REQUEST FOR RECONSIDERATION OF RESTRICTION REQUIREMENT TO ESTABLISH RIGHT OF PETITION

Applicant hereby request reconsideration of the final requirement of restriction.

No Reasons Provided to Establish Differences in Species.

The restriction requirement argues that the application contains two patentably distinct species. The rationale presented to show two species is as follows.

> The Specification clearly points out a first and second embodiment on pg 10 lines 3-4 and page 10 lines 10-22. The first embodiment found in figure 2 is an EEPROM device. The second embodiment found on figure 3 is SONOS device.[1]

This reasoning is not believed to be sufficient to meet the burden necessary to require restriction as it contradicts Applicant's Specification. Applicant's specification clearly defines the figures as follows.

> FIG. 1 is a block diagram showing a method of manufacturing a nonvolatile semiconductor device. FIGS. 2A to 2C are views showing the method of FIG. 1...
>
> FIG. 3 is a block diagram showing a method of manufacturing a nonvolatile semiconductor device according to another embodiment. FIGS. 4A to 4H are side cross sectional views showing the method of FIG. 3.[2]

The above excerpts from the Specification clearly contradict the unduly narrow reading of Applicant's disclosure as only being directed to an EEPROM or SONOS device. In light of

[1] See the Office Action, dated 11/06/02, Page 2.
[2] See the Specification, Page 8, Lines 7-12.

the above showing, Applicant respectfully requests a citation in support of the following statement relied upon in establishing restriction:

> The first embodiment found in figure 2 is an EEPROM device. The second embodiment found on figure 3 is SONOS device.

In addition, Applicant notes that the newly presented grounds of restriction simply indicate that Applicant's Specification includes two embodiments without indicating why the disclosed embodiments should be restricted.[3] Thus, the burden required for restriction cannot been met.

Restriction cannot be established by only identifying two embodiments. The burden has always been on the Examiner to provide reasons and/or examples in support of restriction (MPEP 803). Identifying two embodiments does not constitute a reason or example in support of restriction.

Applicant's Reasons for Traversal Not Correct

The current Office Action states the following:

> Applicant's election with traverse of Species I in Paper No. 3 is acknowledged. The traversal is on the ground(s) that species are not independent or distinct.[4]

Applicant respectfully submits this is not the ground of traversal. Applicant's traversal was on the grounds that no reasons for restriction were presented. The original Office Action, dated 8/27/2002, simply recited two species without reasons why restriction was considered proper.

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[3] See the Office Action, dated 11/6/2002, Page 2, Lines 3-8, which simply identify two embodiments, without any facts to support why the embodiments should be restricted.
[4] See the Office Action, dated 11/6/2002, Page 2, Line 3.

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Classification of Applicant's Figures is Not Correct

The present Office Action places Applicant's figures 6 and 7 as part of Species II.[5] These figures are the Background Art and so should not be considered part of Applicant's invention.

Applicant's Election Has Not Been Followed.

Applicant previously elected claims 1-7 and 12-20 as readable on the alleged species of FIGS. 1 and 2A-2C. The present Office Action has restricted examination on the merits to claims 1-6. This is improper. Claims 7 and 12-20 are clearly readable on the very particular example of FIGS. 1 and 2A-2C.

Applicant will now describe other claims, in addition to those of claims 1-6, that are clearly readable on the alleged species of Applicant's FIGS. 1 and 2A-2C. It is understood that the examples presented are but one very particular embodiment of the claimed invention. The invention should in no way be limited to such very particular examples.

Claim 7

Claim Term	Very Particular Example From 1st Alleged Species
form a SONOS-type device	these layers may be used to form a SONOS-type nonvolatile storage device... (Specification, Page 8, Lines 21-22).

Claim 8

Claim Term	Very Particular Example From 1st Alleged Species
forming a tunnel dielectric	includes a tunneling dielectric **204**... A tunneling dielectric may be formed.... (Specification, Page 8, Lines 7-11).
the insulating layer being a charge storing dielectric	includes... a charge storing dielectric **206**... A charge storing dielectric may be formed by.... (Specification, Page 8, Lines 7-12).

[5] See the Office Action, dated 11/6/2002, Page 2, Line 6.

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Claim 9

Claim Term	Very Particular Example From 1st Alleged Species
forming a tunnel dielectric	includes a tunneling dielectric **204**... A tunneling dielectric may be formed.... (Specification, Page 8, Lines 7-11).
the insulating layer being a charge storing dielectric	includes... a charge storing dielectric **206**... A charge storing dielectric may be formed by.... (Specification, Page 8, Lines 7-12).

Claim 12

Claim Term	Very Particular Example From 1st Alleged Species
forming a bottom dielectric	includes a tunneling dielectric **204**... A tunneling dielectric may be formed.... (Specification, Page 8, Lines 7-11).
forming a middle dielectric	includes... a charge storing dielectric **206**... A charge storing dielectric may be formed by.... (Specification, Page 8, Lines 7-12).
forming a top dielectric... heating substrate to less than about 1200°C for less than 2 minutes	an oxide layer **208** is thermally grown... at temperatures in the range of 900°C to 1100°C... may be formed in about one minute... (Specification, Page 9, Lines 16-19).

Claim 13

Claim Term	Very Particular Example From 1st Alleged Species
reacting hydrogen and oxygen	reacting hydrogen and oxygen (Specification, Page 9, Line 17).

Claim 14

Claim Term	Very Particular Example From 1st Alleged Species
layer selected from... silicon nitride,	...a charge storing dielectric may include silicon

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silicon oxynitride, and silicon rich silicon nitride	nitride, silicon oxynitride, and/or silicon rich silicon nitride, as but a few examples (Specification, Page 9, Lines 9-10).

Claim 15

Claim Term	Very Particular Example From 1st Alleged Species
top dielectric... less than 50 angstroms	...about 30-40 angstroms thick (Specification, Page 9, Lines 19-20).

Claim 16

Claim Term	Very Particular Example From 1st Alleged Species
oxidizing charge storing dielectric	an oxide layer **208** is thermally grown from charge storing dielectric layer **206**. (Specification, Page 9, Lines 16-17).
comprising at least one layer that includes silicon and nitrogen...	...a charge storing dielectric may include silicon nitride, silicon oxynitride, and/or silicon rich silicon nitride, as but a few examples (Specification, Page 9, Lines 9-10).
by reacting hydrogen and oxygen to form a top oxide layer...	reacting hydrogen and oxygen... (Specification, Page 9, Line 17).

Claim 17

Claim Term	Very Particular Example From 1st Alleged Species
oxidizing lasts for less than 2 minutes	an oxide layer **208** ... may be formed in about one minute... (Specification, Page 9, Lines 16-19)

Claim 18

Claim Term	Very Particular Example From 1st Alleged Species
oxidizing occurs at a temperature of less than 1200°C	an oxide layer **208** is thermally grown... at temperatures in the range of 900°C to 1100°C...

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	(Specification, Page 9, Lines 16-19).

Claim 19

Claim Term	Very Particular Example From 1st Alleged Species
a tunnel dielectric below the charge storing dielectric	includes a tunneling dielectric 204... A tunneling dielectric may be formed.... (Specification, Page 8, Lines 7-11).
forming a conductive gate layer over the top oxide layer	depositing a conductive gate layer.... (Specification, Page 10, Lines 3-4).
patterning at least the top oxide layer and charge storing dielectric to form a gate stack	these layers may be used to form a SONOS-type nonvolatile storage device... (Specification, Page 8, Lines 21-22).

Claim 20

Claim Term	Very Particular Example From 1st Alleged Species
the top dielectric has a thickness greater than 20 angstroms...	...about 30-40 angstroms thick (Specification, Page 9, Lines 19-20).

Applicant believes that the above presents very persuasive evidence that claims 7-9 and 12-20 are clearly readable on Species of FIG. 1 and 2A-2C. Thus, the restriction of examination to claims 1-6 is believed to be improper, and claims 7-9 and 12-20 should be examined along with claims 1-6.

Again, Applicant stresses that the above very particular examples should not be construed as limiting the invention thereto. The invention is set forth in the language of the claims, including all equivalents.

For all of these reasons Applicant requests reconsideration of the finality of the restriction requirement to thereby establish right of immediate petition.

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Rejection of Claims 1-6 Under 35 U.S.C. §102(b) based on *Miner et al.* (U.S. Patent No. 6,114,258).

The method of amended claim 1 recites a method of forming a plurality of semiconductor device layers. The method includes forming an oxide layer on an exposed surface by reacting hydrogen and oxygen on the exposed surface of an insulating layer deposited over a wafer. The method also includes forming a conductive gate layer over the oxide layer.

As is well established, anticipation requires the presence of a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.[6] Because the cited reference does not show all limitations of amended claim 1, this ground of rejection is traversed.

Miner et al. shows a method of oxidizing a substrate in the presence of nitride and oxynitride films. However, *Miner et al.* shows a method that oxidizes a covered substrate, not an exposed surface, as recited in claim 1.[7]

Thus, because the cited reference does not show all limitations of amended claim 1, this ground of rejection is traversed.

Claim 1 has been amended. The present claims 1-9 and 12-20 are believed to be in allowable form. It is respectfully requested that the application be forwarded for allowance and issue.

Respectfully Submitted,

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[6] See Lindemann Maschinenefabrick GmbH v. American Hoist & Derrick Col., 221 USPQ 481, 485 (Fed. Cir. 1984).

[7] See *Miner et al.*, Fig. 3, and Col. 4, Lines 50-53, which indicates an oxide layer of SiO_2 is formed at boundary between a nitride/oxynitride film and a substrate.

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Version With Markings to Show Changes Made

In the Claims.

1. (Amended) A method of forming a plurality of semiconductor device layers, comprising the steps of:

forming an oxide layer **on an exposed surface** by reacting hydrogen and oxygen on **[a] the exposed** surface of an insulating layer deposited over a wafer; and

forming a conductive gate layer over the oxide layer.